

## **SEALING ARRANGEMENT**

### **FIELD OF INVENTION**

The present invention relates to a sealing arrangement.

More particularly, the present invention relates to a sealing arrangement  
5 for sealing a container and to a sealing tape for use with the sealing arrangement.

### **BACKGROUND TO INVENTION**

Containers, such as cardboard cartons, are widely used for containing goods for protection and for transportation. The containers are normally  
10 sealed with staples and/or packaging tape to prevent the goods from falling out of the containers and to prevent unauthorised access to the goods.

However, in many instances theft from the containers is committed by people transporting the containers. The people break the packaging tape  
15 and, after committing the theft, reseal the containers with new packaging tape so that the theft is not immediately obvious after delivery of the container. The thieves are normally well supplied with a variety of different packaging tapes, in some instances even with customised company packaging tapes, and are therefore able to open and reseal  
20 many different types of containers without being caught.

It is an object of the invention to suggest a sealing arrangement, which will assist in overcoming these problems.

### **SUMMARY OF INVENTION**

According to the invention, a sealing arrangement includes a body; first  
25 support means associated with the body and being adapted to support a supply of adhesive sealing tape; second support means associated with

the body and being adapted to support a supply of an intermediate strip; and feeding means being adapted, during use, to feed the intermediate strip for adhesion to the sealing tape whereafter the sealing tape is adapted to be attached to an object such as a container, so that the  
5 intermediate strip is sealed between the sealing tape and the container.

The intermediate strip may be selected from a group of a yarn, filament, twine, tape, magnetic tape, telex tape, paper, any other natural fibre and any other synthetic fibre.

The intermediate strip may be at least partially stained to a desired  
10 colour after removal from the second support means and prior to adhesion to the sealing tape.

The intermediate strip may be linear, non-linear, curved, irregularly shaped or may have a zigzag appearance.

The intermediate strip may have patterned edge formations or serrated  
15 edges.

The sealing arrangement may include a printing unit being adapted to apply information to the intermediate strip prior to the intermediate strip being adhered to the sealing tape.

The printing unit may be adapted to apply the information to the  
20 intermediate strip only while the intermediate strip is moving through the printing unit.

The printing unit may include a receiver unit being adapted to receive alternate information for being applied to the intermediate strip.

The receiver unit may be a radio receiver unit.

25 The printing unit may be an impact printer, an inkjet printer or a laser printer.

The information may be printed matter.

The printed matter may be a bar code, words or a company logo and is encoded.

5 The printing unit may be a recorder being adapted to record the information onto a magnetic tape.

The first support means may be a shaft being adapted to rotatably support a reel of the sealing tape.

The second support means may be a shaft being adapted to rotatably support a reel of the intermediate strip.

10 Also according to the invention, a method of sealing a container includes the steps of adhering an intermediate strip to an adhesive sealing tape so that the intermediate strip is at least partially visible through the sealing tape; and of attaching the sealing tape to an object such as a container to seal the container with the intermediate strip being located between  
15 the container and the sealing tape.

The method may include the step of applying information to the intermediate strip prior to the intermediate strip being adhered to the sealing tape so that the information is visible through the sealing tape.

20 The information may be a bar code, words or a company logo and is encoded.

The information may be altered or changed at random intervals.

Further according to the invention, a sealing tape for sealing a container, includes an adhesive tape, wherein a first part of the adhesive tape is transparent and a second part of the adhesive tape is provided with  
25 markings.

The first part may be a narrow strip extending substantially along the centre of the adhesive tape.

The first part may have a width being about  $1/6^{\text{th}}$  of the width of the adhesive tape.

- 5 The first part may be continuous.

The first part may be provided in discrete sections.

The markings may be non-transparent.

The markings may be in the pattern of chevrons.

- 10 The sealing tape may be adapted to receive and adhere to an intermediate strip to be fixedly located between the adhesive tape and a container when the adhesive tape is adhered to a container.

The intermediate strip may be adapted to be aligned with the first part so that the intermediate strip is visible through the adhesive tape.

The intermediate strip may be a printing tape made of paper.

- 15 Information may be adapted to be printed on the intermediate strip prior to the intermediate strip being adhered to the adhesive tape.

The information may be encoded matter, bar codes, words or a company logo.

- 20 The intermediate strip may be linear, non-linear, curved, irregularly shaped or have a zigzag appearance.

The intermediate strip may have patterned edge formations or serrated edges.

A sealing tape as described herein for use with a sealing arrangement as described herein.

**BRIEF DESCRIPTION OF DRAWINGS**

The invention will now be described by way of example with reference to the accompanying schematic drawings.

In the drawings there is shown in:

- 5     Figure 1     A side view of a sealing arrangement in accordance with the invention;
- Figure 2     A plan view of a sealing tape for use with sealing arrangement of Figure 1;
- 10     Figure 3     A plan view of the sealing tape of Figure 2 provided with a printing tape after being dispensed from the sealing arrangement; and
- Figure 4     A partial plan view of a container sealed with the sealing tape and the printing tape of Figure 3.

**DETAILED DESCRIPTION OF DRAWINGS**

- 15     Referring to Figure 1 of the drawings, a sealing arrangement in accordance with the invention, generally indicated by reference numeral 10, is shown. The sealing arrangement 10 is in the form of a packaging tape dispenser having a body 12.

- 20     The body 12 supports a first shaft 14 for rotatably supporting a supply or a reel of sealing tape 16, such as conventional adhesive packaging tape.

- The body 12 further supports a second shaft 18, for rotatably supporting a supply or a reel of an intermediate strip, such as printing tape 20. The printing tape 20 has a narrower overall width than the sealing tape 16 and is made of printable material, such as a thin strip of paper. Although  
25     not shown in the drawings, the printing tape 20 can be non-linear in

form, for example it may have a zigzag appearance, a sinus curve appearance or have serrated edges.

A printing unit 22 is located between the first and second shafts 14,18 and is adapted to print information onto at least one side of the printing tape 20. The information can be customised company information, encoded information, bar codes or any other wording that will be difficult to reproduce by an unauthorised person. The printing unit 22 is activated only when the printing tape 20 is moved through it, thus only when the tapes 16,20 are being dispensed from the sealing arrangement 10. The printing unit 22 can be any type of suitable printer, such as an impact printer, an inkjet printer or a laser printer.

The printing unit 22 can optionally include a receiver unit (not shown) which is adapted to receive remotely given instructions as to what should be printed on the printing tape 20. The receiver unit can be operated by radio frequency so that the instructions can be distributed from a central location, e.g. a manager's office, to a number of sealing arrangements 10 located at various places, such as in a warehouse.

One embodiment of the sealing tape 16 is shown in Figure 2. The sealing tape 16 is an elongated layer of adhesive tape having a first part 24, being substantially transparent, and a second part 26, that is provided with markings 28.

The first part 24 is shown as a narrow strip extending substantially along the centre of the sealing tape 16. Although the first part 24 is shown to be continuous, it can also be provided in discrete sections. The first part 24 has a width of about  $1/6^{\text{th}}$  of the width of the sealing tape 16. On a sealing tape 16 having a width of between 48mm to 72mm, the width of the first part 24 is about 10mm.

The markings 28 on the second part 26 are shown in the form of non-transparent chevrons. The markings 28 can obviously also include any other desired graphic, e.g. circles, flowers, pictures or a company logo.

If desired, the sealing tape 16 can also be provided with a number of other characterising features, such as having opposite edges that are substantially linear and parallel to each other or having opposite edges that are curved or provided with various cut outs.

The sealing tape 16 and the printing tape 20 can be linear or non-linear, curved or irregularly shaped, e.g. zigzag, and can have a patterned or serrated edge formation.

As shown in Figure 3, in use, the sealing tape 16 is dispensed in a normal manner from the dispenser body 12. After the printing unit 22 has printed the required information or wording onto the printing tape 20, the printing tape 20 is aligned with the transparent first part 14 and adhered thereto so that the wording is visible through the sealing tape 16. This prevents the wording from being altered unless the sealing tape 16 or the printing tape 20 is destroyed.

The adhering of the printing tape 20 to the sealing tape 16 causes the printing tape 20 to be automatically dispensed as the sealing tape 16 is dispensed.

Referring to Figure 4, the sealing and printing tapes 16,20 exit the sealing arrangement 10 and are used to close and seal a container 30. Any tampering or opening of the container 30 will cause the printing tape 20 to be destroyed. Any unauthorised resealing of the container 30 will be indicated by the sealing tape 16 not being provided with a printing tape 20 or by the printing tape 20 being printed with the wrong information. The information can be easily checked after delivery of the container 30 to ensure no tampering occurred.

The invention also extends to the substitution of the printing tape 20 by an intermediate strip of material such as yarn, filament, twine, tape magnetic tape, telex tape, paper or any other natural or synthetic fibre or material. The intermediate strip can be provided in any colour and can  
5 further be fully or partially stained to a desired colour by the printing head 22 while being applied to the sealing tape 16. The intermediate strip can be manufactured to be unique to a company so that it is not necessary for the company to print on the strip.